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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,406	03/28/2005	Satoshi Okada	0717-0525PUS1	8973

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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AMIN, JWALANT B

ART UNIT	PAPER NUMBER
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2628

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/06/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/06/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Office Action Summary**

Application No.

10/505,406

Applicant(s)

OKADA, SATOSHI

Examiner

Jwalant Amin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed on 12/06/2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of patent no. 7,006,096 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Koyama (US 7,006,096 B2)

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

3. Regarding claims 1, 6 and 8, Koyama teaches a character display apparatus, a program for causing a character display apparatus to execute a character display process, and a recording medium storing a program, comprising a display device comprising a plurality of pixels; a control section for controlling the display device, wherein each of the plurality of pixels comprises a plurality of sub-pixels arranged in predetermined direction (sub-pixels arranged in Fig. 17B), and at least one of a plurality of color elements is assigned to each of the plurality of sub-pixels; the control section determines at least one sub-pixel, to which a basic portion indicating a skeleton of a character (Fig. 25 shows generating basic portion data from skeleton data) is assigned, among the plurality of sub-pixels in the display device, based on character shape data indicating character shapes (Fig. 24 shows skeleton data representing the skeleton shape of a Chinese character); a first pixel of the plurality of pixels comprises a plurality of first sub-pixels (the pixel from the plurality of pixels being currently processed corresponds to the first pixel); at least one pixel neighboring the first pixel comprises a plurality of second sub-pixels (a neighboring pixel to the pixel being currently processed); the control section determines an arrangement pattern (bit map) containing a plurality of elements (dots), wherein a value of each of the plurality of elements (dots are represented by bits in a bitmap; dots correspond to plurality of sub-pixels in one to

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one manner) is determined depending on whether or not the basic portion is assigned to a corresponding sub-pixel of the plurality of the first sub-pixels and the plurality of the second sub-pixels (a bit having a value of "1" corresponds basic portion is assigned to the sub-pixel, and a bit having a value of "0" corresponds to basic portion is not assigned to the sub-pixel); the control section introduces a predetermined change (predetermined conversion) into the arrangement pattern, the predetermined change including one of replacement of a position of the basic portions and duplication of the basic portion (shifting each dot forming the first bitmap to generate the second bit map), and determines a luminance level (intensity/ brightness level; color element level is converted to the brightness level) of the first pixel based on the changed arrangement pattern, wherein the luminance level of the first pixel based on the changed arrangement pattern is determined using a stored table (correction table of fig. 28 and 34; the correction table is stored in the auxiliary storage apparatus) indicating a correspondence between arrangement patterns of sub-pixels (sub-pixels 1, 2 and 3 in fig. 28 and 34) and luminance levels of sub-pixels arranged in a certain direction (color element level of each sub-pixel is converted to a brightness level, col. 21 lines 49-50; sub-pixels are arranged in the right or left hand side (X or -X direction) vicinity of a sub-pixel), which is one of the same as the predetermined direction and different from the predetermined direction (arrangement of sub-pixels in X or -X direction is same as the predetermined direction) (Figs. 17B, 24-29 and Figs. 34-36, col. 1 lines 22-30, col. 3 lines 8-25 and lines 38-43, col. 4 lines 2-10 and lines 47-51, col. 5 lines 47-48 and lines

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60-64, col. 14 lines 10-24, lines 38-45 and lines 50-55, col. 20 lines 61-67, col. 21 lines 1-23 and lines 39-52, col. 22 lines 40-49 and lines 57-67, col. 23 lines 1-18).

4. Regarding claim 3, Koyama teaches the plurality of elements include a first element (current bit/ $D(x,y)$ ) and a second element neighboring the first element (eight neighborhood dots) (Fig. 18; col. 5 lines 47-48); a value of the first element indicates that the basic portion is assigned to a sub-pixel ( $C(3x+2,y)$ ) relating to the first element (Figs. 15A-B, col. 14 lines 50-53, col. 15 lines 6-18); a value of the second element ( $N(-1,0)$ ) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (when the bit has a value of "0", none of it's three sub-pixels is defined as a sub-pixel for the basic portion) (Figs. 15A-B, col. 14 lines 42-45 and lines 53-55); and the control section determines the luminance level (intensity of the color element) of the first pixel based on another arrangement pattern (second bit map) which is modified (predetermined conversion) from said arrangement pattern (first bit map) such that a value of the second element is changed to indicate that the basic portion is assigned to the sub-pixel relating to the second element (the second bit map is generated from the first bit map by shifting each dot; when the first bit map is shifted the value of current dot is also shifted to the next dot indicating that the next dot forms new bit map) (col. 3 lines 13-25 and lines 38-48).

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama as applied to claim 1 above, and further in view of Desai (US 6,282,328 B1).

7. Regarding claim 2, Koyama teaches the plurality of elements include a first element (current bit/D(x,y)) and a second element neighboring the first element (eight neighborhood dots) (Fig. 18; col. 5 lines 47-48); a value of the first element indicates that the basic portion is assigned to a sub-pixel ( $C(3x+2,y)$ ) relating to the first element (Figs. 15A-B, col. 14 lines 50-53, col. 15 lines 6-18); a value of the second element ( $N(-1,0)$ ) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (when the bit has a value of "0", none of its three sub-pixels is defined as a sub-pixel for the basic portion) (Figs. 15A-B, col. 14 lines 42-45 and lines 53-55).

Koyama discloses the claimed limitations as stated above, except that Koyama does not explicitly teach the control section determines the luminance level of the first pixel is determined based on another arrangement pattern which is modified from said arrangement pattern such that a value of the first element is interchanged with a value of the second element. However, Desai teaches a method of providing morphological transformation of an image by rearranging pixels of the image, employed to effect a dilation transformation by identifying the maximum pixel intensity in each column (col. 1 lines 28-38, col. 2 lines 21-25 and lines 34-46; method of providing morphological transformation corresponds to control section; image corresponds to arrangement pattern; rearranged corresponds to modified; intermediate image corresponds another

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arrangement pattern; pixels from selected "neighborhoods", or regions, of the source image are rearranged corresponds to another arrangement pattern which is modified from said arrangement pattern; pixel intensity value corresponds to luminance level; in order to identify the maximum pixel intensity in each column, the pixel intensity of all the elements in the column needs to be determined, which corresponds to determining the luminance level of the first pixel; replacing each pixel (point) in the image with its brightest neighbor corresponds to a value of the first element is interchanged with a value of the second element). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to replace each pixel in the image with its brightest neighbor as taught by Desai and use it into the apparatus of Koyama to determine the pixel intensity value because such system pertains to the morphological transformation of images via dilation, suitable for use with non-uniform offsets (col. 1 lines 15-18), and operates accurately and rapidly, without requiring unduly expensive processing equipment or without undue consumption of resources (col. 2 lines 1-4).

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama, and further in view of Hill et al. (US 6,243,070 B1; hereinafter referred to as Hill).

9. Regarding claim 4, Koyama discloses all of the claimed limitations as stated above, except that Koyama does not explicitly teach the control section determines the luminance level of the first pixel based on a combination of a color of the character and a background color of the character and the arrangement pattern. However, Hill teaches



scan conversion method that generates a bitmap image where "on" means the intensity value associated with the pixel sub-component produces the specified foreground color, and "off" means the intensity value associated with the pixel sub-component produces the specified background color (col. 15 lines 62-67, col. 16 lines 1-37; scan conversion method corresponds to control section; bitmap image/bitmap corresponds to arrangement pattern; "on"/"off" corresponds to values associated with the bits of the bitmap image; intensity value corresponds to luminance level; specified foreground color corresponds to color or the character; specified background color corresponds to background color of the character). Therefore, it would have been obvious to one of ordinary skill in the art at the time the of present invention to use scan conversion to determine the luminous intensity values based on the foreground and background colors as taught by Hill into the apparatus of Koyama because it allows different portions of a scaled image to be mapped into different pixel sub-component providing for a higher degree of resolution (col. 16 lines 1-3).

10. Regarding claim 5, Koyama discloses all of the claimed limitations as stated above, except that Koyama does not explicitly teach the control section compares a combination of a color of the character and a background color of the character with a combination of a predetermined character color and a predetermined background color, and determines the luminance level of the first pixel based on a result of the comparison and the arrangement pattern. However, Hill teaches scan conversion method where the luminous intensity of both a foreground and background colored pixel is determined, and portions of the image are compared to the desired foreground and background

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colors (col. 19 lines 29-37, col. 20 lines 7-9, col. 23 lines 58-67, col. 24 lines 1-13 and lines 31-36; image/bitmap image corresponds to arrangement pattern; foreground color corresponds to color of the character; background color corresponds to background color of the character; current pixel corresponds to first pixel; desired foreground color/foreground color pixel corresponds to predetermined character color; background color pixel corresponds to predetermined background color; luminance value/luminance intensity values corresponds to luminance level). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to use the scan conversion method to process and adjust the luminous intensity values as taught by Hill and use it into the apparatus of Koyama because this reduces or eliminates color distortions introduced into an image as the result of treating different color pixel sub-components as independent luminance sources (col. 24 lines 33-36).

### ***References Cited***

11. The following references teach to determine and adjust the luminance level of a pixel.

- Tezuka et al. (US 2002/0008714 A1)
- Koyama et al. (US 6,542,161 B1)
- Hill et al. (US 6,188,385 B1)
- Koyama et al. (US 2003/0011603 A1)
- Lui et al. (US 6,339,426 B1)

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jwalant Amin whose telephone number is 571-272-2455. The examiner can normally be reached on 9:30 a.m. - 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

\*\*\* J.A. 2/26/07



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